ON SCENE

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ON SCENE

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COVER: Coast Guard Cutter POINT HARRIS comes to the aid of the WIZARD OF BRISTOL off Koko Head, HI. Story on page 27.

ON SCENE is a quarterly, authorized, special interest publication, produced by the Office of Navigation, Safety and Waterway Services for members of the U.S. Coast Guard and the SAR community. Editorial content is not to be considered as authority for official action, nor as record material. Individual views and opinions expressed do not necessarily reflect those of the Department of Transportation or the U. S. Coast Guard.

Letters to the Editor

Dear ON SCENE Editor,

Two articles which recently appeared in the 1/89 issue provided good coverage with regard to the current status of ELT's and EPIRB's ("EPIRB 101" by LCDR Embler, and "Status Report On Emergency Beacons" by Mr. Lemon). Those of us who must locate these signals will no doubt find our job easier once the 406 MHz ELT/EPIRB finds its way into the maritime and aeronautical communities. The prospect of being able to receive codified SAR information, along with a position determining accuracy of three nautical miles, will no doubt save countless hours of wasted time in the prosecution of "false alarms", while at the same time allowing rescue coordinators and search and rescue units (SRU's) to sharpen their response time to genuine emergencies.

A question which comes to mind, however, concerns the ability of the Coast Guard SRU's to home on the 406 MHz signal. As an HH-65A pilot, I know the highest frequency to which my aircraft is capable of receiving and establishing a bearing is 399.975 MHz. Having made some informal inquiries with various other Coast Guard stations, it seems this problem is common to many other types of resource units as well.

In his article, Mr. Lemon mentioned the Radio Technical Commission In Aeronautical Services (RTCA) standard which will require incorporation of both a 121.5 MHz transmitter and a 406 MHz ELT. While pre-existing direction finding (DF) equipment aboard Coast Guard aircraft is capable of locating the 121.5 MHz transmitter - provided the operator is able to continue making transmission - the ability to track the 406 MHz ELT is severely restricted, depending upon the SRU in question. And Legislation affecting maritime vessels could eliminate the 121.5 MHz EPIRB all-together!

Not having seen or heard of efforts by G-N or G-E to reconfigure SRU's with the capability of homing on this frequency, I was interested in seeing what you knew about it.

LT Jim Hasselman, CGAS Los Angeles

Dear LT Hasselman,

Concern that search and rescue units (SRU's) be able to home on distress beacons is valid. Some organizations feel that, given a typical position accuracy of 1.5 NMs with a 406 MHz beacon signal, a search area will be small enough that it can be quickly and thoroughly searched. While seemingly logical, this position shows lack of understanding of factors that affect probability of detection during a visual search, e.g., search object size, surface conditions, darkness and other low visibility conditions, human scanner limitations, etc.

Some argue that SRU's should be able to home on 406 MHz alerting signals. While technically feasible, such homing has operational limitations. Only specially equipped SRU's could home on 406 MHz; other often-used units, like DOD, CAP and general aviation resources, would neither be able to detect nor home on these signals. 406 MHz signals also have inherently limited

homing potential since they transmit in half second bursts every 50 seconds. During the silent interval, a fixed-wing search aircraft could completely overfly the search area between line-of-position updates.
Recognizing need for a separate homing signal for 406 MHz beacons, the Radio Technical Commission for Maritime Services and the Radio Technical Commission for Aeronautical Services have developed national standards for 406 MHz EPIRB's and ELTs, respectively, which require 121.5 MHz AM signals for homing. These homing signals can be picked up aurally, and are characterized so that EPIRB's can be aurally distinguished from ELT's. Some potential exists for the 121.5 MHz signal to be detected aurally and relayed via an overflying aircraft, though only general beacon locations are available with such reports.

Internationally, the International Maritime Organization (IMO) has led in debating the distress beacon homing issue. IMO will require merchant vessel carriage of 406 MHz EPIRB's, but addition of a 121.5 MHz homing signal will be only a recommended option. Therefore, a few nations may allow carriage of 406 MHz EPIRB's without supplemental 121.5 MHz signals. Liferafts aboard these ships will, however, be required to carry Search and Rescue Radar Transponders compatible with most aircraft and ship radars (Coast Guard units included).

Since some foreign vessel EPIRB's may lack special homing signals, current plans are to provide WMEC's, WHEC's and possibly some Coast Guard aircraft with 406 MHz homing capability.

Incidentally, the first two 406 MHz EPIRB's have recently been type accepted for sale and use in the U.S., and many more models are in the testing and acceptance process.

Dear On Scene Editor:

I would like to comment on the article RESCUER "BURNOUT" PREVENTION by LCDR French in your 2/89 Issue.

As a former SAR Officer I suggest that the traumatic stress disorder may actually begin during the SAR event as well as after. I believe Dr. Mitchell alludes to this in his portion of the article also.

Since retirement in 1984, I have been a marine consultant in the private sector, primarily specializing in boating accident cases. During case studies and accident reconstruction I was surprised to learn that upon arrival at the accident scene that the responding unit(s) appeared to become emotionally involved. General operations such as vessel recovery, MEDEVAC, towing, etc., went smoothly enough but official reporting and administrative requirements of the incident (Boarding Reports, SITREPS, etc.) appeared to suffer from lack of SOP. Subsequent interviews of these crews provided some unexpected insight for me. Comments and statements such as... "I just couldn't bring myself to do a boarding after the operator saw his wife get killed" or "Yes... I did observe safety violations but these people had enough problems already and I wasn't going to make it any worse..." were fairly common.

I agree with Dr. Mitchell when he states "surprises tend to cause shock or stunning as well as disorientation and confusion" of on scene personnel. In a recent case I found the statements of the three crewmembers on a SAR boat were in conflict when none of them could agree on the circumstances surrounding the incident (physical evidence, damage, location of the victims, on scene weather, time or other agencies involved).

I absolutely agree that this stress disorder is very real for SAR crews and I am convinced there is a real need for CISD (Critical Incident Stress Debriefing).

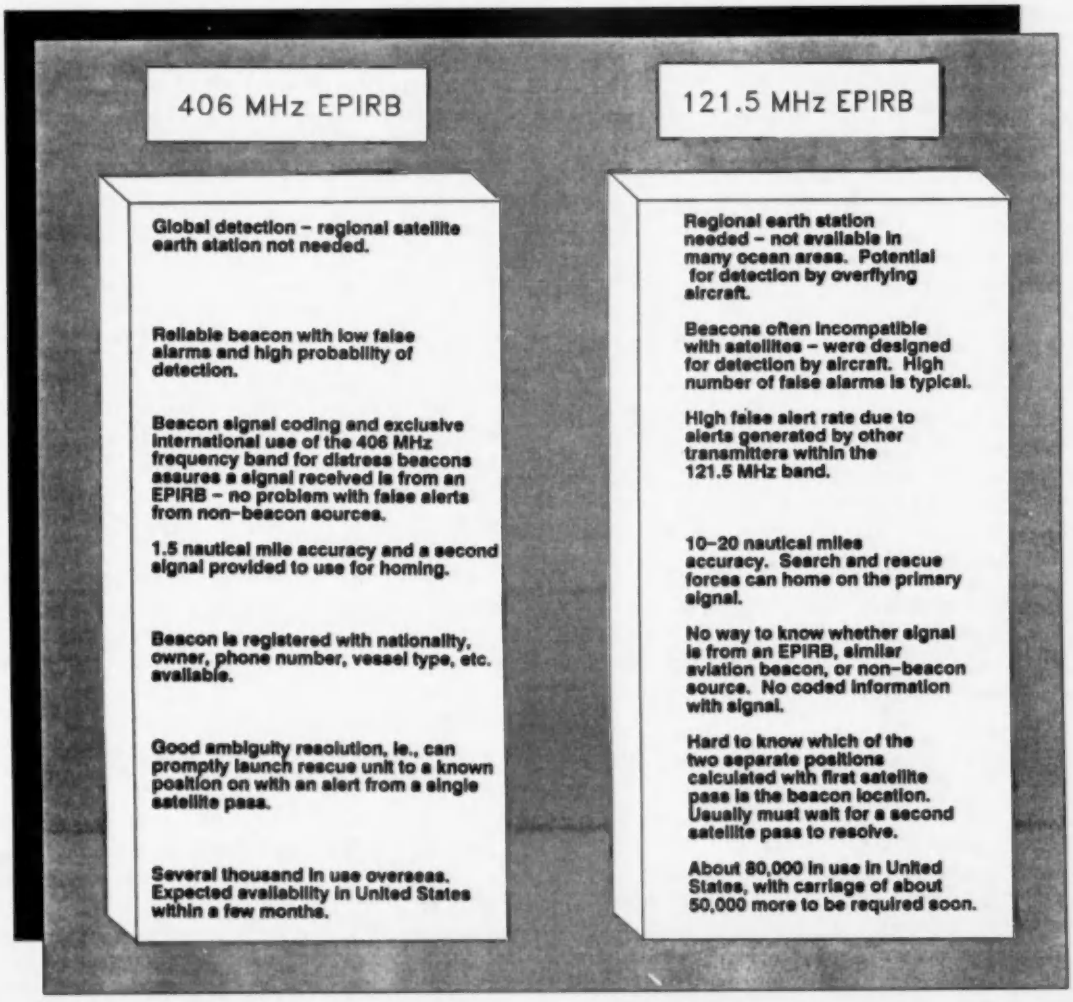
Sincerely,

David N. Russell
CDR, USCG (Ret)

GENERAL COMPARISON OF 121.5 MHZ EPIRBs AND 406 MHZ EPIRBs

By: Dan Lemon (G-NRS-3)

An EPIRB is an Emergency Position-Indication Radio Beacon for vessels. Emergencies at sea often occur during which 121.5 MHz (megahertz) EPIRBs are used to send distress signals which are never detected. Though these radio beacons have helped save many lives, they have definite limitations. EPIRBs are considered to be an alerting means of last resort, with voice radio transmissions normally serving as the primary means if circumstances permit. A new 406 MHz EPIRB expected to be available soon in the United States, and already in use in Europe, will not only be more reliable and effective, but will enable alerting from any water of the world. The following chart gives a general comparison between EPIRBs using the frequencies mentioned.


406 MHz EPIRB
Global detection – regional satellite earth station not needed.
Reliable beacon with low false alarms and high probability of detection.
Beacon signal coding and exclusive international use of the 406 MHz frequency band for distress beacons assures a signal received is from an EPIRB – no problem with false alerts from non-beacon sources.
1.5 nautical mile accuracy and a second signal provided to use for homing.
Beacon is registered with nationality, owner, phone number, vessel type, etc. available.
Good ambiguity resolution, ie., can promptly launch rescue unit to a known position on with an alert from a single satellite pass.
Several thousand in use overseas. Expected availability in United States within a few months.
121.5 MHz EPIRB
Regional earth station needed – not available in many ocean areas. Potential for detection by overflying aircraft.
Beacons often incompatible with satellites – were designed for detection by aircraft. High number of false alarms is typical.
High false alert rate due to alerts generated by other transmitters within the 121.5 MHz band.
10-20 nautical miles accuracy. Search and rescue forces can home on the primary signal.
No way to know whether signal is from an EPIRB, similar aviation beacon, or non-beacon source. No coded information with signal.
Hard to know which of the two separate positions calculated with first satellite pass is the beacon location. Usually must wait for a second satellite pass to resolve.
About 80,000 in use in United States, with carriage of about 50,000 more to be required soon.

SAR INITIAL ACTIONS INTERVIEWING TECHNIQUES

By: QMC Dave Ginsburg, National Search and Rescue School

Gathering information during a SAR case is a dynamic process. Often we are tasked with undertaking hazardous cases on only the barest of information.

Collecting quality information is one of the functions of the SAR planner. The SAR planner must establish a methodology for collecting SAR information. Generally the most up-to-date information can be obtained by interviewing respondents over the telephone or voice radio.

The SAR planner must be in control of the conversation if the interview is to be productive. There are four methods of establishing such an atmosphere.

1. *Create a Professional attitude.*
2. *Control the flow of information.*
3. *Avoid jargon & acronyms.*
4. *Evaluate the urgency.*

Professional Attitude

Identify your unit and yourself so that the general public has an immediate understanding of Who you are and Who you represent. Example: "Good morning, Coast Guard Group Key West Operations Center, Chief Verdigris, may I help?"

If at all possible someone at your unit should periodically visit or contact other agencies or resources you work with. This will allow your counterparts in other organizations to place a face with a name. It will also allow you to exchange information on resource availability.

When you contact a person or organization for information or assistance, keep them informed! The courtesy of including them in a debrief will make them willing to assist you on the next case.

Control the Flow of Information

Make an effort to control your voice and emotions so that you sound both patient and interested. This is as close as you can come to a verbal handshake. Frequently respondents are intimidated by, or reluctant to talk to an "authority" over the phone. Ask questions that begin with who, what, where, when, why and how. Questions phrased this way require more than a simple yes or no answer. The more detailed the response the better the information. You may also unearth information not previously considered.

If the situation warrants, ask general questions first, then develop personal questions. Respondents usually feel more comfortable telling you about personal behavior (i.e. drinking, finances, relationships) after they become comfortable talking with you.

Use your title and last name in your conversations. When making repeated phone calls to respondents (especially the relative of a person involved in an incident) it is normal to want to "humanize" the conversations by using your first name. Should you use your first name, you are giving control away. Once you give that control away you never get it back. At this point you may make your job harder, particularly if you must suspend a case. In these situations, people don't want to get up close and personal. First names seem frivolous. They want to know someone in authority is handling their case.

Ensure that you have a comfortable, well lighted desk or console to work at. You may want to use a telephone headset during busy periods.

Control and organize the conversation by using a checklist. This will insure you cover all the details. Don't worry about leaving blanks during the interview. You can always come back or simply mark those as N/A later. As a general rule you cannot have too many details. A checklist makes this process more efficient. In a long conversation summarize the information you have received periodically. This ensures you have the facts correct and it gives the interviewee a chance to think of additional things.

Jargon and Acronyms

Avoid jargon and acronyms! These are useful shorthand for "insiders". You cannot assume that the respondent is aware of all the slang, jargon and acronyms you have acquired during your career. Example: "Lady your husband's boat is DIW because his red gear is CASREP'd. Since the WX is FAC and he has plenty of PFD's for his POB, I am

not going to divert my MLB from the case he is on". Whew! The public will perceive that as pure gibberish.

Urgency

Finally, but most importantly evaluate the urgency. The respondents tone of voice may not give away the urgency. People react differently in a crisis. A tourist may not realize the severity of a situation he or she is reporting. Always find out the nature of the distress and position first. Details about the boat's owner etc. can always be gathered after the emergency is over. If the skipper is performing CPR he may not be able to tell you right now how many lifejackets he has onboard.

A SAR case is a dynamic and not a static process. Interviewing and collecting information improves the quality of this process.

Good information is the foundation for making good decisions during search and rescue.

NATIONAL SAR SCHOOL – BACK IN BUSINESS

By: LT R. R. Schaefer, G–NRS–1

The National Search and Rescue School graduated it's first class from its new site in Yorktown on 27 October 1989. A combined graduation and opening ceremony was held at Coast Guard Reserve Training Center to mark the official reopening of the school. RADM Robert T. Nelson, Chief, Office of Navigation Safety and Waterway Services, was the key speaker. RADM Nelson and CAPT Teeson, Commanding Officer of RTC Yorktown, rang a new class bell to officially open the school. Ringing a bell to start classes has been a long standing tradition at the National SAR School.

RADM Nelson's remarks covered the current status and some future movements within the SAR program. Included were the plans to expand the role of the National SAR School to involvement in all aspects of search and rescue professionalism. The eventual goal is to establish a National Search and Rescue Institute with a wide variety of functions, from continued excellent training to evaluation of procedures and equipment. A National SAR Institute will provide a center of search and rescue expertise and will be a resource for all search and rescue agencies and individuals across the nation.

Also being considered is the development of a Combat Search and Rescue Planners Course. All five armed services have reconized a need for special training for SAR planners in a joint combat situation. The SAR School is the logical focal point to develop combat SAR training objectives and conduct training for all the services. The impact of such a course on the National SAR School would be the addition of instructors from each of the armed services and approximately eight class convening each year.

The National SAR School is in good health and has a bright and challenging future. This new start should only be the beginning of good things to come. Watch for some changes soon, and many others down the road.

CLASS SCHEDULES FOR NATIONAL SAR SCHOOL

By: LT R. R. Schaefer, G-NRS-1

Below are the convenings for the MRCC and GROUP SAR courses for FY-90. Most of the classes convene mid-week, convening days are indicated in paranthesis. Requests for quotas should be submitted to COMDT (G-NRS-1) on a Short Term Training Request as soon as a need is known. This will help with our assignment of quotas and ensure your seat in class. Noted below is the current number of quotas still available in each class, as you can see they are filling up fast. A gentle reminder... training request must name an individual, open quotas for a unit are not given. Quotas are assigned using a first in, first out algorithm, and by priority. Those filling SAR planning billets are primary recipients of quotas. Those included are district and group SAR controllers and assistants, group operations and assistant operations officers, and second priority are station COs/XOs, OinCs/XPOs. The headquarters contact for SAR School quotas is LT Rich Schaefer (G-NRS-1), FTS 267-1559, Comm (202) 267-1559. Maritime RCC Controller Training Quota Status (as of 06 NOV 89)

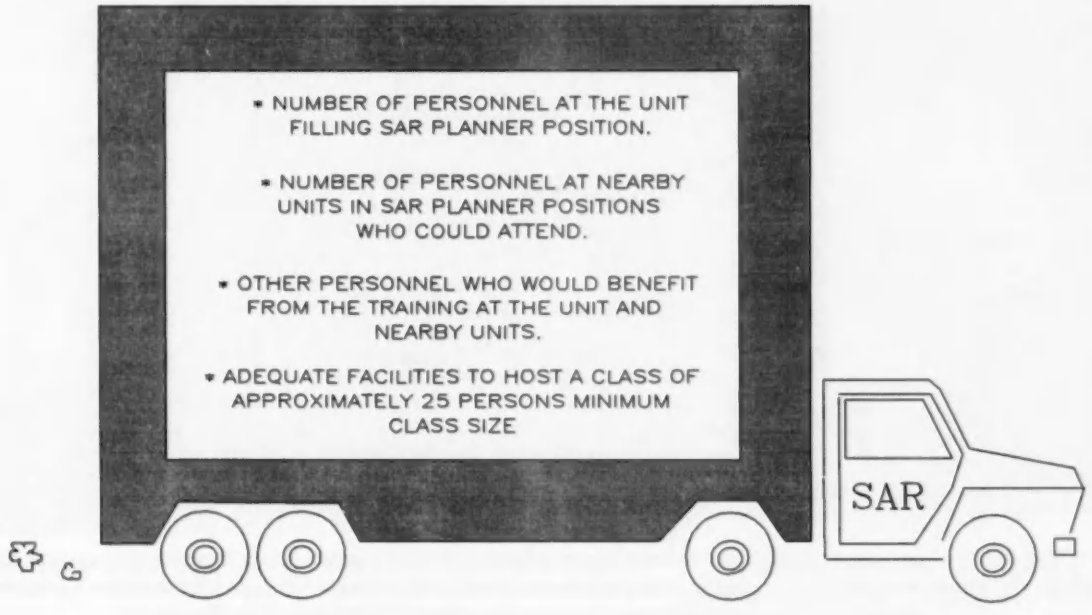
MARITIME RCC CONTROLLER TRAINING	QUOTA STATUS (AS OF 06 NOV 89)
30 OCT – 10 NOV 89 (MONDAY)	GRADUATED
31 JAN – 15 FEB 90 (WEDNESDAY)	10 QUOTAS OPEN
14 MAR – 29 MAR 90 (WEDNESDAY)	14 QUOTAS OPEN
25 APR – 10 MAY 90 (WEDNESDAY)	15 QUOTAS OPEN
13 JUN – 28 JUN 90 (WEDNESDAY)	15 QUOTAS OPEN
01 AUG – 16 AUG 90 (WEDNESDAY)	15 QUOTAS OPEN

GROUP SEARCH PLANNER TRAINING	QUOTA STATUS (AS OF 06 NOV 89)
16 OCT – 27 OCT 89 (MONDAY)	GRADUATED
10 JAN – 26 JAN 90 (WEDNESDAY)	FULL
21 FEB – 08 MAR 90 (WEDNESDAY)	FULL
02 APR – 13 APR 90 (MONDAY)	10 QUOTAS OPEN
16 MAY – 01 JUN 90 (WEDNESDAY)	12 QUOTAS OPEN
11 JUL – 26 JUL 90 (WEDNESDAY)	15 QUOTAS OPEN
22 AUG – 07 SEP 90 (WEDNESDAY)	15 QUOTAS OPEN
12 SEP – 27 SEP 90 (WEDNESDAY)	15 QUOTAS OPEN

EXPORTABLE TRAINING FOR SAR PLANNERS

By: LT R. R. Schaefer, G-NRS-1

Exportable training was one of the many items heartily endorsed at the March 89 Coast Guard SAR conference. People in the field would like to see the National SAR School Staff on the road making visits and conducting training. Currently the SAR School can handle up to four "road trips" a year, including foreign and Coast Guard Auxiliary training trips. Because exportable training is a cost-effective means of reaching a broader audience then is possible through resident training, G-NRS and SAR School are interested in developing a schedule of SAR planner training trips to various areas for FY-91. Any unit willing to host this training is encouraged to submit a request to G-NRS-1 via the chain of command. Requests will be prioritized on several factors including:


• NUMBER OF PERSONNEL AT THE UNIT FILLING SAR PLANNER POSITION.
• NUMBER OF PERSONNEL AT NEARBY UNITS IN SAR PLANNER POSITIONS WHO COULD ATTEND.
• OTHER PERSONNEL WHO WOULD BENEFIT FROM THE TRAINING AT THE UNIT AND NEARBY UNITS.
• ADEQUATE FACILITIES TO HOST A CLASS OF APPROXIMATELY 25 PERSONS MINIMUM CLASS SIZE
SAR

SAR planner positions are district and group SAR controllers, group operations and assistant operations officers, and station CO/OINC and XO/XPO. Other personnel who could benefit from the training are in priority order: those likely to perform on scene commander duties, SAR pilots and coxswains, and finally others involved in SAR.

Because of the SAR Schools full schedule and the advance planning required, this training will not be available in FY-90. Requests should be for dates in FY-91 and should indicate which dates are best to ensure a full class. A dedicated 5 day period should be used in planning availability of facilities and personnel to attend.

"B". When a command utilizes a SAR Corpsman the level "A" medical kit supplements the level "B" kit. As medical qualifications of SAR Corpsmen have increased, available space in the level "B" kit has diminished to a point that a RAMEC must be submitted to modify the level "B" kits into one container when needed. A Pack, Rescue and Survival Medical, (NSN) 8465-01-290-1780 was recommended as a replacement. SAR Model Manager has submitted recommendations to NAVMEDMATSUPPCOM via NAVMEDCOM. The SAR Model Manager will also submit changes to the NWP 19-1 and advise Fleet Units by SARGRAM when approved. The changes will result in a savings on the cost of the RAMEC as well as better storage and utilization of medical kits.

*Another highlight of the conference was the appearance of a surface rescue swimmer drysuit that may replace the tried but true custom-fit wetsuit. Endorsed by both COMNAVSURFLANT and COMNAVSURFPAC, this item was introduced to battle the operational, logistic, and environmental problems associated with the current wetsuit. Utilizing state-of-the art drysuit technology, a prototype surface rescue swimmer drysuit has been designed and is currently awaiting further evaluation before being submitted to NAVSEA for full testing and Fleet procurement.

The CNO SAR conference represents a valuable line of communication for members throughout the SAR community to meet and discuss important items and related ideas that will save lives. Coordinator for the Navy's SAR Model Manager, LieutenantCommander Kerry Sullivan, stated "we are always looking for suggestions that may save lives." One form of communication that goes out to the SAR community via message is the "SAR GRAM." If you are not receiving this valuable piece of information or have anything you would like to submit, please write: Commanding Officer HC-16, SAR MODEL MANAGER, NAS Pensacola, Florida 32508-5204. The next CNO SAR Conference is tentatively scheduled for December of 1991, "So others may live."

The Chief of Naval Operations Search and Rescue Model Manager Staff put together an impressive display of SAR equipment. This display shows part of the equipment required and used to preform rescues throughout the world

R&D UPDATES

Research and Development Study on the Effects of Crew Fatigue

By: CWO Jake Miller, G-NRS-2

Early in 1990 the Coast Guard R & D Center, in conjunction with the Naval Biodynamics Laboratory will conduct a new study regarding fatigue and boat crew performance. It will be used to verify and adjust boat crew fatigue standards and support recommendation regarding crew scheduling and force planning.

The effects of fatigue on performance have always been generally suspected but not thoroughly quantified. This study will be comprised of a series of tests which will provide defined quantitative data regarding the effects of fatigue. Nine different tests will be used measuring: rapid and accurate manual responses, perception and response, memory and search, manual assembly, and math speed and accuracy. In addition four subjective tests will be used to check crewmember perception of mood, fatigue and level of motion sickness.

The tests will be run using four to seven four man boat crews underway for 16 hour periods. They will each run a test period in seas less than 4ft., then in seas greater than 4ft. Afloat testing will be done on a 41' UTB using a special seat mounted in the forward compartment. Participant responses will be made using joysticks, keypads, and tappers switches connected to a zenith 248 computer.

Great Lakes Heavy Weather Utility Boat Study

By: LCDR James Hanks G-NRS-2

This study will both characterize the Great Lakes operating environment and determine the suitability of operating a heavy weather utility boat in this environment. A symetrical hulled catamaran has been chosen as the test platform for this study. Initial tests were carried out on a 27' outboard powered Australian built Shark Cat catamaran in Fall '88.

Future plans call for R&D center to complete their study characterizing the Great Lakes operating environment by Mar '90. The Ninth District will attempt to procure a diesel powered 32' Catamaran to use as a test platform in Spring '90. Completion of this project presently hinges upon the District's success at obtaining a suitable resource.

Potential benefits of this project could include improved seakeeping and stability, faster response time in all sea states, reduced manning requirements and maintenance demands, and greatly reduced acquisition costs over the MLB replacement.

How Much Do We Spend To Run Our Small Boats? How Much Should We Spend?

By: LT Mike Monteith G-NRS-2

A project underway at the Coast Guard Research and Development Center in Groton, CT promises to provide district and headquarters boat managers with a useful tool for budget preparation when justifying the cost of operation and support of standard boats. Working with the Search and Rescue Facilitie Branch, (G-NRS-2), the R&D Center has developed a Small Boat Operation and Maintenance Cost Model which addresses the many fixed and variable costs of keeping our utility boats and motor lifeboats ready for action. At this time, a prototype model exists, based upon a unique Decision Matrix Software program, which permits budget managers to estimate the obvious expenses and hidden support costs of small boat operations. The model has many uses for all districts who must, yearly, request operational and maintenance funding for their standard boats.

The model was developed through on-site auditing of small boat stations, groups, districts, and area support elements. It accesses variable boat costs driven by operations, climate, unit facilities, etc. The model also incorporates many costs, such as yard contracts, as constants, based upon service-wide averages. The model may be run on the Coast Guard Standard Terminal and will use operator prompted documentation and instructions. A product for field use is expected to be available by the FY92 budget cycle.

QUICK REFERENCE USE OF THE SWEEP WIDTH TABLES IN THE NATIONAL SEARCH AND RESCUE MANUAL

By: LCDR F. L. Bradham (G-NRS-1)

Sweep width tables included in Volume II of the National Search and Rescue Manual are the result of many hours of research by the Coast Guard Research and Development Center. However, research being conducted on improving the "probability of detection" continues primarily because the technology available to both the maritime community, and to SAR responders, continues to improve.

This research gives us better guidance to increase our success as life savers. The technology improvement leads to new research and testing which then results in new search recommendations - nothing stops or gets simpler but the success rate increases with these improvements.

Just a few years ago we "old time" planners needed only use the visual sweep width tables. Today, our SAR resources on any particular SAR case may have a wide variety of radar capabilities, infrared scanning, night vision goggles, and new advanced navigational capabilities. Professional planners must stay current with the their resource capabilities. This includes knowing the capabilities a particular resources has on any case. What model radar does the responding C-130 have onboard? Does the HU-25 navigation computer have the program which conforms with the sweep width tables in the latest version of the National SAR Manual? Which units have VHF-FM direction finding capability for electronic searches?

Depending on the SAR resource capabilities and the search target, waiting for first light to commence a search is not necessarily the best recourse. Modern technology, when it is available, makes it possible to find and rescue those in distress during periods of darkness or low visibility and poor weather conditions. However, a considerable amount of this technology is not yet widely available but SAR planners need to know what is "up and coming" and become immediately aware when their resources are upgraded. If new technology is installed in a SRU then the search capabilities may be enhanced. Planners should discuss those capabilities with the SRU operators and even call the Coast Guard Research and Development Center, Search and Rescue School, or Commandant (G-NRS) to learn of the latest research on the equipment and how it can be best used as a search resource.

Look at the tables in Volume II and you will see the best sweep width recommendations for visual, electronic, or both visual and electronic searches available at the time of publication of the National

SAR Manual in 1986. Several studies have been conducted since its publication and new recommended sweep widths will be depicted in the upcoming change to SAR Manual.

The sweep width tables shown in Volume II of the National SAR Manual should be used by all SAR resources to the greatest extent possible in all search operations. Several "quick" references had been provided to the field or developed in the field prior to the sweep width tables now shown in the National SAR Manual.

These old "quick" references no longer represent the best probability of detection and need to be removed from the system. If the operators need a handy reference to have onboard the SRU, it is recommended that stations and air stations reproduce the tables applicable to their resources, laminate it and give it to the coxswain, air crew, station OOD, and any others involved in immediate response and SAR planning. For example, for UTB crews, copy Table 4-10 found on page 4-7 of Volume II, delete the section applying to the WPB and add the weather condition factors as shown in Table 4-11, laminate it, and place it in the coxswain kit for the UTBs at the station.

We must all remember that quick references are only "quick and dirty" for someone to begin action pending the study and analysis to determine the specific actions necessary to obtain the best results for that particular case. Planners and operators are cautioned not to treat quick references as the "gospel". All too often we develop a bad habit of only using the quick references. An example of a bad habit is surface SRUs using a search speed of 9 knots or 12 knots only because these are speeds used in the tables of the current CG Addendum National SAR Manual to figure time verses area for search areas. The factors which are most important to consider for determining search speed are weather conditions, visibility, type of search object and the capability of the search platform - not the ease of calculating time of search.

So, professionals in the maritime SAR world, know the capabilities of your resources, know the search target and on-scene conditions and use the tables many, many hours of expertise have created for us to do the most effective search possible.

NOTE: The Coast Guard Addendum to the National SAR Manual (COMDTINST M16130.2(series)) is being completely rewritten and updated. Planned distribution is by summer 1990.

NEW COLUMNS TO BE ADDED

In the next issue of ON SCENE with the beginning of the new calendar year, two new columns will become regular features. These are:

***Research and Development - SAR Work In Progress**

***SAR School News**

COAST GUARD R&D PROGRAM PUBLISHES ENVIRONMENTAL ATLAS OF THE BEARING SEA

By: Coast Guard Research and Development Staff

The Coast Guard Research and Development Center has published an "Environmental Atlas of the Bering Sea," Report Number CG-D-04-89, covering the area shown in Figure 1. It contains oceanographic, meteorologic, and air-sea interface information that is a composite of traditional climatological and oceanographic data interspersed with non-traditional empirical information useful to Coast Guard operations. The atlas presents the information in a condensed format and then carries out a more rigorous examination of the information to accommodate readers with different levels of interest. Subjects covered include physical oceanography, oil spill transport, oil spill containment or mitigation efforts, climatology and meteorology, sea ice, and ship and equipment operations in first year ice.

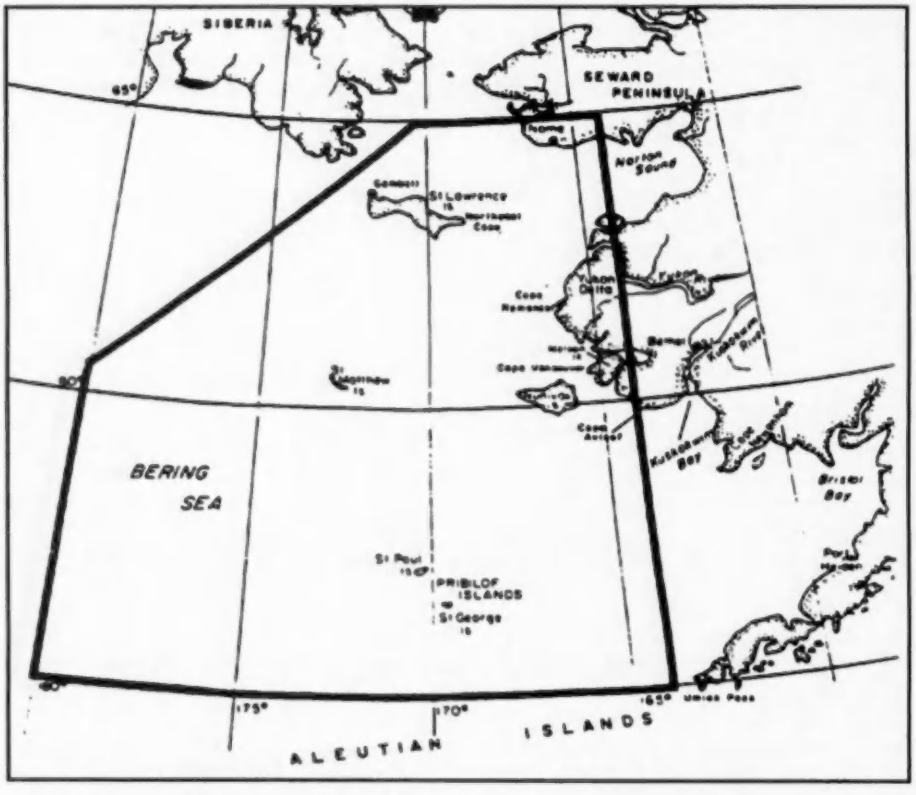


Figure 1. Bering Sea Atlas area with prominent geographic features

The atlas of the Bering sea is similar in many respects to other atlases

developed for the areas (see Coast Guard R&D Reports CG-D-33-84, CG-D-13-88, and CG-D-14-88). The presence of sea ice during the winter months and the potential for severe superstructure icing on marine structures is discussed. Also covered is the fact that the cold ocean water can seriously affect aircraft flying conditions for extended periods during the summer months.

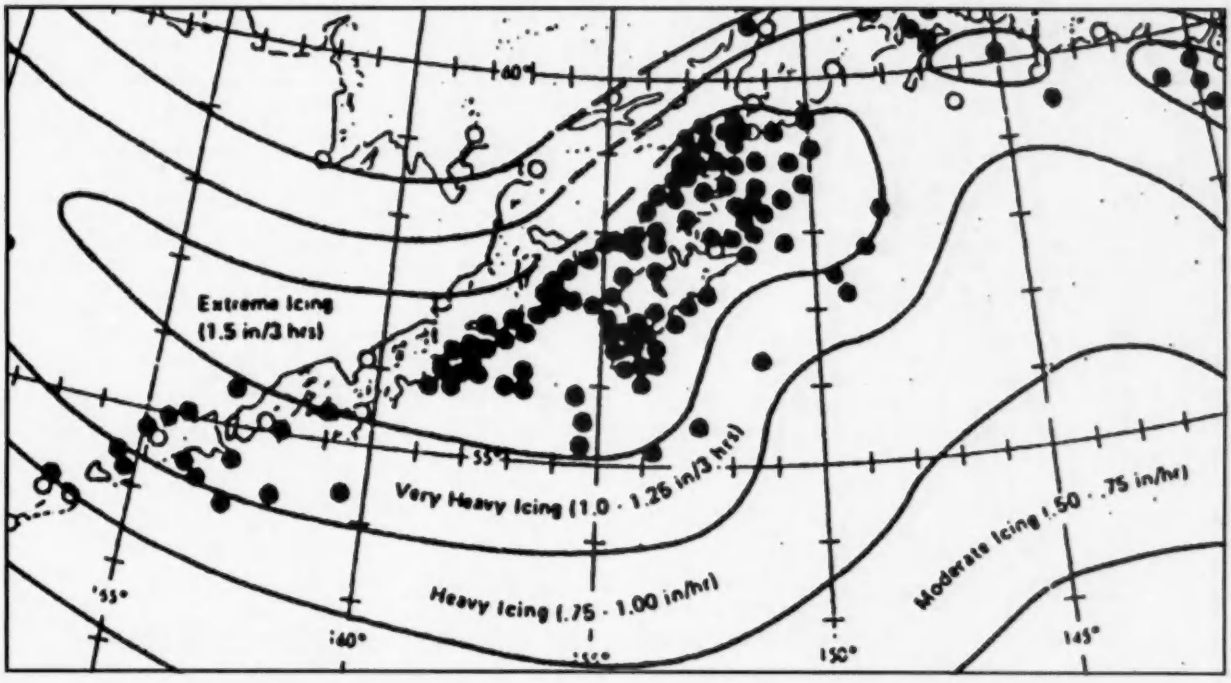


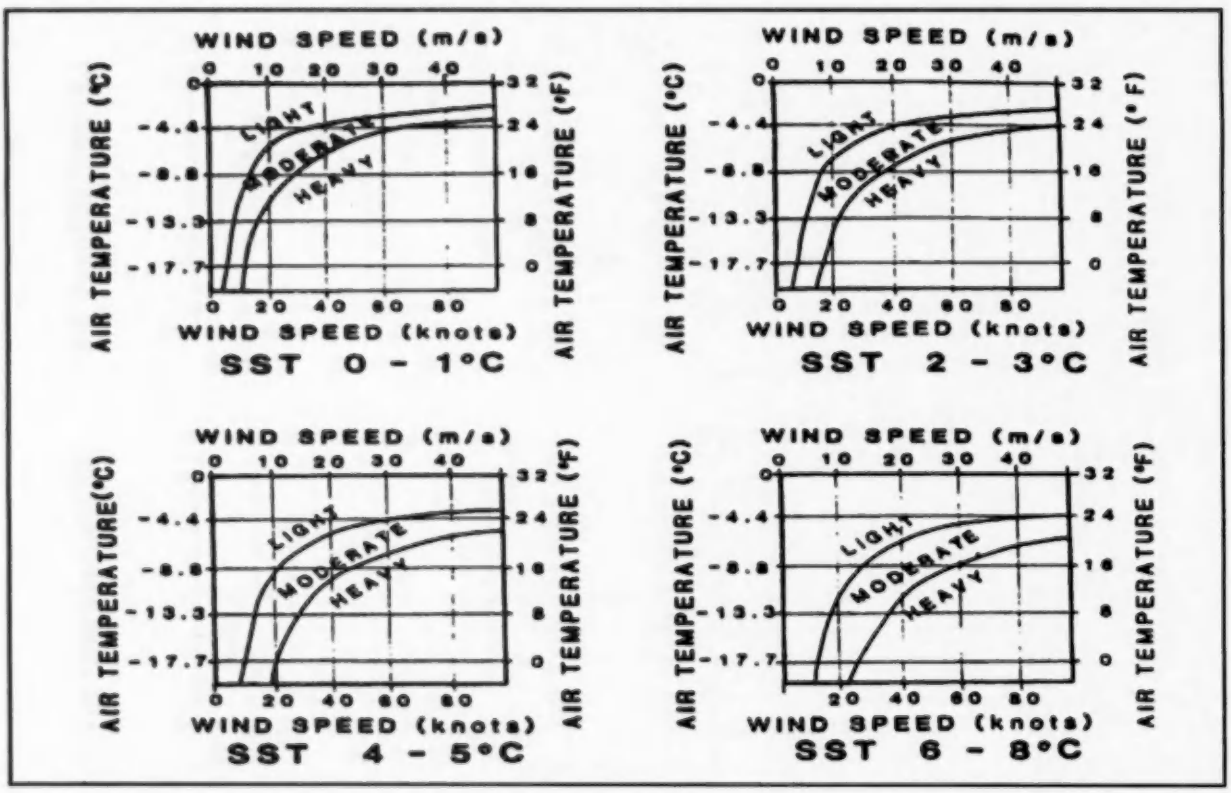
Figure 2. A portion of the chart from the report that gives estimated areas where superstructure icing occurs in the Northern Pacific Ocean and the Bering Sea (Wise and Comiskey, 1980)

Of special interest is the section on operations in first year ice. The information presented does not imply that the Coast Guard recommends operations in first year ice in other than icebreakers and vessels with reinforced hulls . This information is for the aforementioned vessels and others that find themselves inadvertently trapped within first year ice. As vessels expand their operating areas and season for economical reasons, more operations will be carried out in the interface between open ocean and first year ice. There is a noted lack of information covering operations in first year ice. Many operations in the past have been carried out there without consideration being given to collecting data that would further the study of the effects of ice on vessel hulls. Some recommendations are given for operations in the first year ice area and it is also noted that formalized study is recommended.

Another area of interest, especially to vessel operators and search and rescue forces is the section on superstructure icing. Superstructure icing is the freezing of liquid water on structures. The water comes from waves hitting the vessel (freezing spray), spray being blown off the crest of waves (spindrift), freezing rain or drizzle, snow mixed with any of the above, and supercooled water droplets (ice fog). Figure 2 (part of a chart from the report) indicates probable areas of superstructure icing in the North Pacific and Bering Sea. Note especially the number of reports in the vicinity of Kodiak Island which is just right of center in the figure. Figure 3 is a set of nomograms for prediction of potential superstructure icing rates. Generally, superstructure icing is a

function of the generating phenomena (wind, temperatures and sea) as well as the characteristics of the icing targets (ships and equipment).

This report is available through the National Technical Information Service, Springfield, VA 22161.



Figrue 3. Nomograms for prediction of potential superstructure icing rates.

Icing conditions for vessels heading into or abeam of the wind.

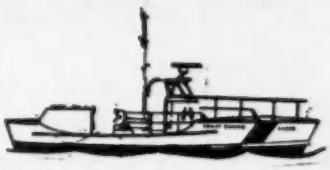
Light icing - Less than 0.7 cm/hr (0.3 in/hr).

Moderate icing - 0.7 cm/hr (0.3 in/hr) to 2.0 cm/hr (0.8 in/hr).

Heavy icing - Greater than 2.0 cm/hr (0.8 in/hr).

SST - Sea Surface Temperature.

BOAT CREW PROFESSIONALISM



By: CWO Jake Miller G-NRS-2

Last edition I wrote about professionalism and some of the ways this concept can be applied to small boat operators. In this issue I would like to expand on this idea and relate it specifically to underway training.

As I see it, the number one job of a small boat station is operational readiness. There are other important jobs at a station, but this is the most important. It is why we have stations. In order to maintain our readiness we must train, and best training, for a boat driver is to drive a boat. There's just no way around it.

This is true for senior people as well as trainees. Somewhere along the way, some of our senior station personnel have got the idea that driving the boats is the job of the third class or seaman. This could not be further from the truth. Stations, with few exceptions, are staffed with as many BM2/1's as BM3's. They were not put there just to push paper and to pull shore watches. They were put there to be boat coxswains.

Of course we don't want our senior people to hog all of the wheel time, but that's not the same as saying they should all go home. Who actually gets underway should depend on the circumstances of each case and also on the training requirements of the people in the duty section. A case that offers some unusual or especially difficult challenge is an opportunity for senior, more experienced, people to maintain their skills and also to train the less experienced people. It is the obligation of all professionals to maintain their skills at the highest possible level. Which means they must get underway.

Every year we have a few accidents that were probably avoidable. Of course not every accident can be attributed to lack of training. I would argue though, that it is a lot harder to roll over your boat if you don't get caught sideways to the waves, which is often avoidable if the person driving the boat has the training and experience to recognize the dangers of a particular situation and knows the proper reaction to avoid it. Again you can't just learn this from a book, you must get out on the water and train and run some operations.

Onward, one of my jobs is quota management for the Coxswain "C" course offered at RTC Yorktown, the OIC course at Petaluma and the courses offered by the National Motor Lifeboat School. As such I am the final recipient of your short term training requests. I need more! NOW! While resident "C" schools cannot solve all of your training problems, when used in conjunction with a thorough station training program they can help. They probably ought to have a little more priority then some of you seem to be giving them. You could put the opportunity to go to a school in front of say, computer school, floor waxing, or heaven forbid, going on leave, or whatever other very important things you have going on that really should not be more important than improving your professional knowledge.

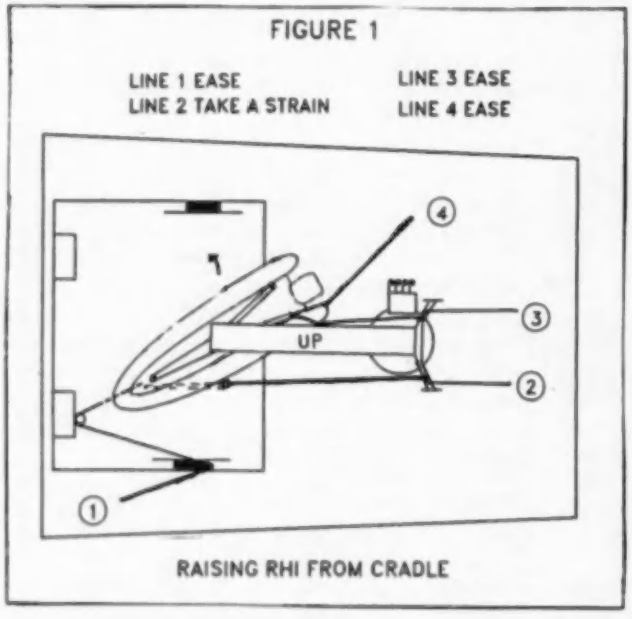
Finally, speaking of training, in response to the many CG-4428's (if you don't know what it is you will) I keep getting, let me finish this off with a little training of my own. Go get your copy of COMDTNOTE 5600, Directives, Publications and Reports Index. Now turn to page 250 and take a look at any of the entries for boat stuff, those are the ones that start 16114. Got it, now look at the top of the entry. It will say Sponsor: G-NRS Stockpoint: DOT. "Sponsor" means the office responsible for writing the instruction and keeping it up to date. In the case of the 16114 instructions that is us. If you have a question about the manual content write or call. "Stockpoint" means the place where the manual is sent out from. Notice how this says DOT, not G-NRS. OK, now turn back to page 4. This is where all of the addresses are listed for the stock points, including DOT. The moral of this story is that if you read the instructions in the front of the manual and send your request directly to the stockpoint; you will get your publications a lot sooner.

Meanwhile, keep those cards and letters coming. Remember, the number to call is FTS 267-2868 and the address to write to is Commandant (G-NRS-2), attention CWO Miller.

RHI LAUNCH AND RECOVERY ON 110' WPBs – MAKING IT SAFER

By: LT J. A. Sartucci, USCGC CHANDELEUR

One of the most dangerous operations on a WPB is launching and recovering the RHI in heavy weather. All WPBs incorporate a single point davit and are relatively unstable platforms in heavy weather. While the 110' WPBs are larger than older patrol boats and have active fin stabilization, this operation is still dangerous for several reasons: The 110' WPBs is top heavy and has a propensity to roll significantly at slow speeds (when the fins are ineffective). The RHI is cradled approximately 4 feet above the main deck. The telescoping boom is situated so that a tall pendulum is created when the RHI is lifted above the deck and cradle. The 5.4 meter RHI is larger and heavier than the 4 meter RHI used on 82' and 95' WPBs.

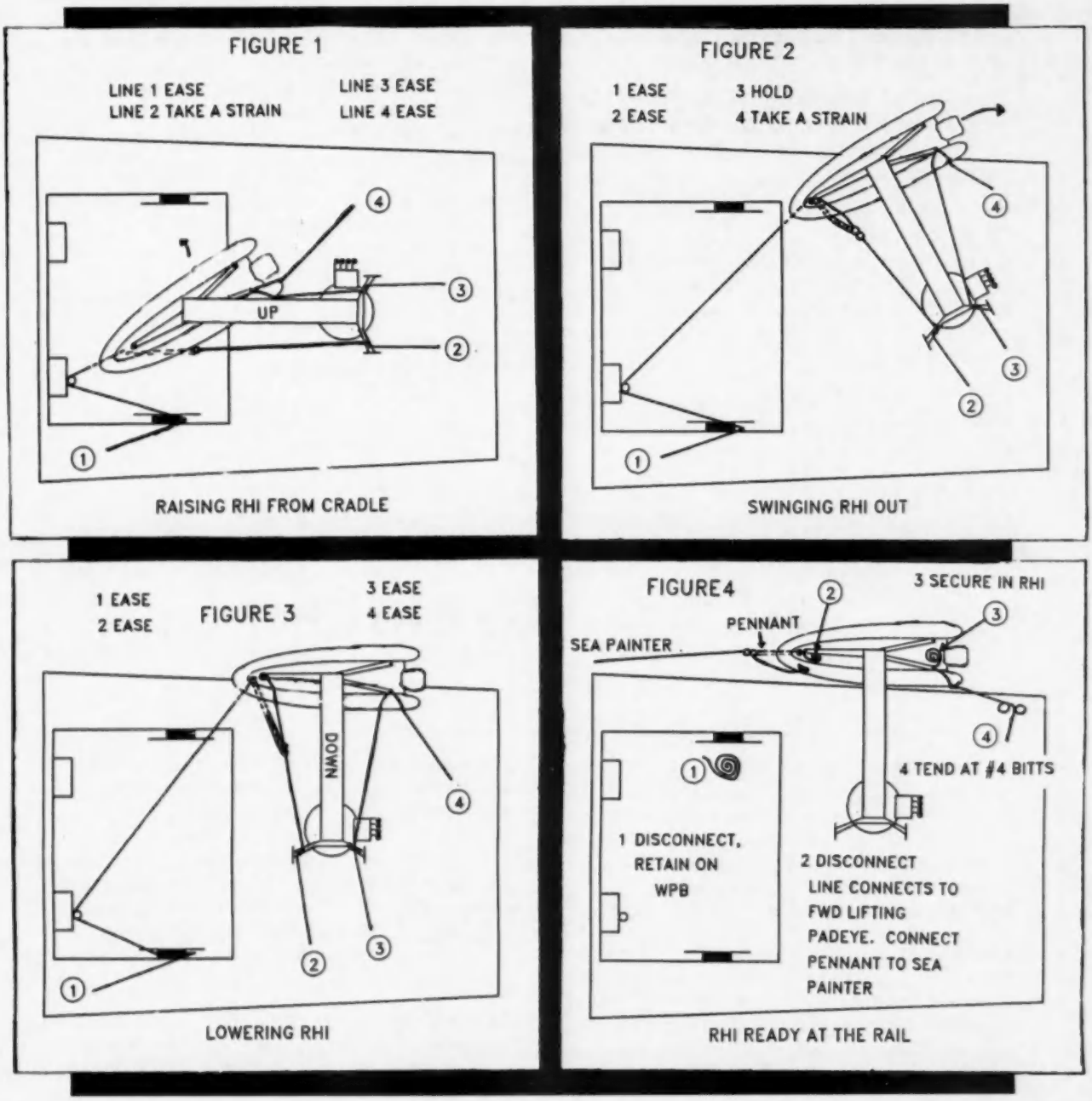


The 110' WPBs are configured with a set of horns extending perpendicular to the boom base that are used to control lines running from the bow and stern of the RHI. These lines are used to position the RHI perpendicular to the boom as the RHI is lifted and swung over the side of the ship. They also swing the RHI to line up with the angled cradle when cradling the boat. A third line is usually deployed from the stern of the RHI for better control. This method works well enough in relatively stable conditions. However, in seas of 6–8 feet or greater the motions of the WPB often causes the RHI to swing while suspended in the air, risking damage to the RHI and injury to personnel on deck. Most 110' WPB Commanding Officers I know run down sea while launching and recovering the RHI to minimize the WPB motions.

On CHANDELEUR BM1 C. E. Matthews developed a modification to this system which greatly improves the 110' WPBs capability to launch and recover the RHI in heavy weather. A fourth line is used to control the RHI while it is suspended in the air. This line is run from the bow of the RHI through a snatch block located on the port forward corner of the boat deck and tended at the port aft cleat on the boat deck (see figure 1). The lines on CHANDELEUR are laid out as follows:

The #1 line is 60 feet of ½ inch diameter 3 strand nylon line eye spliced to a stainless steel snap hook. This line is snapped onto the RHI trailer eye bolt.

The #2 line is 30 feet of ½ inch diameter 3 strand nylon line eye spliced to a stainless steel snap hook. This line is attached to the RHI sea painter pendant. The pendant is a 6 feet of 1¼ inch diameter 3 strand nylon line eyespliced at both ends. One end is secured to the RHI trailer eye bolt with a 5/16 inch stainless steel shackle. The other end is attached to a stainless steel, swivel joint, quick release snap hook of a breaking strength similar to that of the sea painter. The quick release pin is attached to an 8 foot long ¼ inch diameter 3 strand nylon line with an eyesplice. The other end of the line is eyespliced to a #2 snap hook and is secured to the RHI. The release line is attached to RHI forward lifting padeye when cradling and uncradling the boat and is attached to the RHI port bow D ring when the boat is ready at the rail for launching.



Figures 1 thru 4 show the sequence of launching the RHI over the starboard side of a B class 110' WPB, detailing the actions of the linehandlers. In figures 2 and 3 you can see how significant pitching or rolling by the WPB would put the suspended RHI in motion if the #1 line was not used. It is important for the #1 linehandler to keep sufficient tension on the line to prevent its fouling on the boat deck interferences while the RHI is being swung out or in. Note in figure 4 that while the RHI is at the rail, the #1 line is disconnected and retained onboard the WPB. The #2 line is secured to the RHI forward lifting padeye and the sea painter is attached to the pendant. The quick release pin line for the pendant snap hook is moved to the RHI port forward D ring. To cradle the RHI, the sequence of figures is reversed.

The #3 and #4 lines are both 30 foot ½ inch diameter 3 strand nylon lines eye spliced to a 5/16 inch stainless steel shackle. The shackle is attached to the RHI port aft lifting padeye.

The sea painter is 100 feet of 1 inch diameter double braided nylon line run from the starboard #2 bitt on the WPB. The outer end is eyespliced to a 5/16 inch stainless steel shackle.

The snatch block is sized for the #1 line and has a swivel joint. It is attached to the bottom of the port engineroom intake vent with a ½ inch stainless steel eyebolt. The block is located inboard of the centerline of the RHI cradle to counteract the tendency of the #2 line to pull the RHI bow outboard of the cradle.

Some A class 110' WPB Commanding Officers prefer to launch the RHI over the port side of the WPB to avoid swinging the boom over the control station on the starboard side of the boom foundation. This requires lifting the RHI even higher over the cradle to clear the boom crutch. The snatch block and fourth line make this maneuver safer as well. In this case the #1 line should be led from the snatch block to the port forward boat deck cleat and forward.

Other 110' WPB commanding oficers may modify this system as suits their own preferences. The system is adaptable and can be operated with only 3 linehandlers, dropping the #3 line if personnel shortages dictate. The main point is that four lines are safer than three and the snatch block arrangement provides better control over the RHI while it is suspended in the air.

MISHAP DEBRIEF

An MLB was dispatched to work a SAR Case involving a fishing vessel that had capsized in a breaking surf. Due to the low roof on the boat house, the 44 foot MLB was moored with the mast in the stowed position. When the call came to aid the vessel in the surf, the mast was placed in the up position, but was not properly tightened down.

During the prosecution of the case, the 44 foot MLB was struck by a 20 foot breaking wave. The mast, which was not properly secured, fell down. Luckily, no individuals were hurt. Had a person been standing behind the mast, the event could have lead to serious injury and degraded response to a vessel in distress.

During the excitement of a SAR case, it is very easy to forget the minor details which may lead to mishap. At this time, more than ever, it is important to take that extra moment or two to insure that all required steps are taken. The crew of this MLB got on scene and assisted in the rescue of a survivor. Had the mast fallen on one of the crew, the rescuers may have had to turn around to save their own team member and dispatch another resource to the scene. In the long run, the time saved by not tightening the mast in the upright position may have delayed the rescue of the survivor.

"Take a minute for safety" is more than a slogan. The environment we operate in is hazardous enough with the safety precautions we take. Don't hedge the odds by skipping steps.

41' UTB SYSTEM CENTER ESTABLISHED

By: LT Guy R. A. Sorensen, 41' UTB System Center

UTB SYSTEM DEDICATION

From left to right: Captain Douglas H. Teeson, Commanding Officer, Coast Guard Reserve Training Center, Yorktown, VA; LT Guy R. A. Sorensen, Chief, UTB System Center; RADM Robert T. Nelson, Chief, Office of Navigation Safety and Waterway Services; CDR Philip E. Sherer, Chief, Operations Training Branch, Yorktown, VA.

October 27, 1989, RADM Nelson, Chief, Office of Navigation Safety and Waterway Services, "cut the ribbon" formally marking the establishment of a unique new facility: the 41' UTB SYSTEM CENTER. The UTB SYSTEM CENTER is unique not because of any physical characteristic, but because of the concepts embodied in its mission. Located at the Coast Guard Reserve Training Center Yorktown, Virginia, and gathered together in one location are all the management aspects related to the UTB. These aspects include the presentation of training, conducting operations and the development of standardized operational techniques, development of maintenance needs and procedures, and evaluation of prototype equipment and beneficial suggestions. In short, the staff of the UTB SYSTEM CENTER is tasked with being the experts on all things regarding the 41' UTB.

Driven by the primary goal of improving station readiness by standardizing boat crew operations, training and maintenance, the staff of the systems center has developed or is participating in several

innovative training programs. As part of this mission, they conduct Boatswains Mate rating training and Coxswain "C" training at the center for regulars and reserves. This training has pioneered the use of "adult learning theory" within the Coast Guard, stressing the need for a program oriented toward the individual trainee. To accommodate such a program, one instructor serves as a mentor for each four trainees and leads them through a performance based qualification program.

An equally important function for the staff of the UTB SYSTEM CENTER is their performance as the Coast Guard's Standardization Team for 41' UTB's. In this capacity, teams of trained personnel are sent throughout the UTB community to enhance the effectiveness and standardization of our training and maintenance programs. On a biennial basis, the Standardization Team visits each station with a 41' UTB assigned. The visits provide the Coast Guard with valuable information regarding the material condition of our boats and the operational readiness of their crews. This, in turn, provides supervisors and managers at various levels an opportunity to evaluate system strengths and weaknesses affecting the UTB community and take action as necessary to upgrade readiness.

The UTB SYSTEM CENTER is also designed to provide the different program managers at Coast Guard Headquarters with information regarding the UTB community. Recommendations regarding changes to operating and training manuals; evaluating new training programs before they are sent to field units; assisting in the evaluation of new equipment and alterations to existing equipment; evaluating UTB related beneficial suggestions; and, constantly reviewing our standardization program, enable members of the System Center to provide current research and evaluation information.

For further information regarding the UTB System Center, the following phone number extensions are available:

Chief, UTB System Center FTS 827-2247

BM Rate Training	*827-2168*
UTB Standards Team	*827-2125*
UTB Engineering Maintenance	*827-2214*
UTB System Center	*827-2311*

Commercial access is available by calling (804) 898-(extension).

FOUR MINUTES LEFT: WRITER RECOUNTS PLUNGE

By: Tom Dove

Reprinted with permission from Capital Entertainment Magazine, Capital Newspaper, Annapolis, MD

As my head sank beneath the near-frozen surface of the water on Valentine's Day, I had one thought: "I have four minutes."

It was a routine visit to our boat to inspect the dock lines, battery charge level and general condition of things. I was following my own advice as given in this column a few weeks ago to check on a boat regularly during the winter, especially if it's stored afloat in the marina as ours is.

Everything aboard was in fine condition, so I went to the bow, held the forestay and stepped toward the pier. In an instant, I was in the frigid water.

I swam back to the surface, reached as high as possible and grabbed a dock line going from the boat to the pier. "Get your head out of the water," I thought. "Most heat loss occurs from the head."

I pulled hard and managed to get my head and shoulders above the surface. That was better, but I was already cold. It's amazing how rapidly immersion in cold water will chill you - 25 times faster than air, according to survival experts.

I had been in the water about 30 seconds. Three and one half minutes left.

Why did those numbers come back so readily as I hung on? It had been several years since I first studied the effects of hypothermia in a lifesaving class and a boating-safety seminar, but the statistics were impressive.

Studies by the Coast Guard and the British Navy had found that the first four minutes were critical in avoiding cardiac arrest in sailors who went overboard. The colder the water, the shorter the time, and on this February day, the water was mighty cold.

"Call for help. Maybe someone will be around to hear you," I thought. Not a chance.

My wife was inside the house fifty yards away with all the doors and windows closed. The community security guard would be inside his patrol car. I was between a couple of boats and invisible from the shore and there had been nobody out walking when I fell in.

"Pull yourself out onto the pier with this dock line," my brain told my muscles. "Who, us?" replied my arms as they tried vainly to lift my waterlogged body six feet vertically. Three minutes left.

"Go to the stern of the boat and climb out on the hinged swim ladder," I thought. No good. I am compulsively neat and had folded the ladder up and lashed it in place for the winter months.

"There is one ladder somewhere on the marina bulkhead," I remembered, "Is it at this pier or the next one?" I couldn't be sure and swimming 75 feet would drain all my remaining energy. There is no beach at the marina.

I spotted the neighbor's powerboat. "A stern platform. That boat has a stern platform only a foot above the water!" I realized.

With two and one-half minutes left to survive, I clambered onto the welcome fiberglass, dragged myself onto the pier and sloshed back to the house.

My wife, Pam, sent me to take a warm (not hot) shower and began to dry my heavy clothes. My skin was brilliant red and I was too cold to shiver.

I thawed and began to mentally to organize this article. At the risk of sounding like a schoolteacher, let's review the lesson:

- *When you go to your boat, be sure somebody knows where you are and when you will be back.*
- *A swim ladder on the stern is a lifesaver. Make sure it can be reached from the water at all times.*
- *The swim platform is the greatest invention since life lines.*
- *Every pier needs a ladder to the water.*
- *Life is fragile.*

I hope you never need to take a final exam on the subject.

Better Environmental Data For Better CASP Solutions

By: LCDR Walter Hanson, International Ice Patrol

During the latter half of this decade, Fleet Numerical Oceanography Center (FLENUMOCEANCEN), the supplier of environmental data for the CASP system at the Operations Computer Center (OCC), has greatly improved its forecasting of oceanographic and meteorological conditions. Although better data is presently available to represent the environment, neither the Navy nor the Coast Guard uses this data for search planning. We are now trying to take advantage of these advances and develop user requirements that will ensure the "best available" data is always used for search planning.

Following the March 1989 SAR Conference, representatives from Headquarters, the R&D Center, the OCC, and oceanographers from the International Ice Patrol visited FLENUMOCEANCEN, the Naval Oceanographic R&D Activity (NORDA), and the Naval Oceanographic Office (NAVOCEANO). A broad range of topics was discussed to ensure that Navy capabilities that were in any way pertinent to search planning were addressed. Such topics included: application of satellite data from the Defense Meteorological Satellite Program and NOAA satellites; application of the Navy's drifting buoy program, which plans to deploy buoys similar to those proposed as datum markers by the Coast Guard R&D Center; better telecommunications between Coast Guard units and FLENUMOCEANCEN; as well as obtaining better environmental data to run CASP.

Several Navy initiatives will affect CASP. The winds heretofore used by CASP were modeled for a level 63 feet (19.5m) above sea surface. This year they will be modeled for a level 32 feet (10m) above the sea surface. In the future it will be possible to apply winds at various levels between the surface and 32 feet based on the height of the search object. These Navy products are currently available; however, Coast Guard computer applications must be modified to accept the new inputs. Changes must also be made to accept the higher resolution winds that will be available this year and in the future. By 1990, a four fold improvement in the mesh on which winds are modeled will occur. Instead of winds derived from a 2.5 degrees of latitude by 2.5 degrees of longitude grid, the new winds will be 1.5 by 1.5 degrees. This wind product can be further refined to a 50' by 50' grid, by a sophisticated interpolation method. Data round-off errors will also be reduced by packaging wind data differently (as N/S and E/W vector components vice speed and direction).

Like the wind inputs, the Navy ocean circulation products have undergone significant improvement. The ocean surface currents heretofore used by CASP were derived from a 3 by 3 degree grid. They were the sum of climatological density-driven currents, steady-state wind drift, and sea wave drift. This year the Navy began modeling the currents using a dynamic wind drift component which will better represent water movement in the upper ocean. They will also begin modeling the currents on a finer (1.25 by 1.25 degree) grid. Improvements will continue and by the mid 1990's they will have a 30' by 30' resolution current product. The greatest challenge to the Coast Guard will be handling the much (36 times) larger data set.

Second-order statistics (systematic errors) in the environmental products, which are important to the probability of detection solutions were also discussed. Although intensive quality control is performed by FLENUMOCEANCEN on its numerical models, information in the form needed for CASP does not exist and will have to be compiled. A major factor in systematic error is observations reported to FLENUMOCEANCEN.

It is a little-recognized fact that the Coast Guard is a major contributor to the environmental data bases that it uses for search planning. Coast Guard cutters during the course of their routine operations sig nificantly affect wind and current products. It is essential that synoptic weather reports (classified or unclassified) be submitted regularly and are accurate. Cutters with XBT systems provide temperature profiles from which FLENUMOCEANCEN infers surface currents.

The meeting concluded that their is great room for improvement and that much is within our grasp. The Navy is working hard at improving the quality and quantity of wind and current data. The early to mid 1990's will see a virtual explosion in the quantity of data. The recent meetings were the first step in the Coast Guard effort to make sure that we are ready to use the best available data in search planning.

101 YEARS AGO

US. LIFESAVING SERVICE ANNUAL REPORT 1888

While numerous marine accidents were reported, shipping generally escaped with far less casualty than might have been expected, a circumstance largely attributable to the fact that on most of the Atlantic seaboard the wind was off the shore. At Delaware Breakwater, however, where the harbor was full of anchored vessels, the havoc was unparalleled, though, owing to the splendid work of the station crews, aided by the citizens of Lewes, the fatality to human life was comparatively slight. Two instances only fall within the scope of the Service operations. The first of these was the loss of two lives attending the wreck of the schooner ALLIE H. BELDEN, of Portland, Connecticut, which took place at half past 2 o'clock in the morning about eight hundred yards northeast of the Lewes Station, (Fifth District.)

It appears that shortly before midnight of the 11th the wind, which had been fresh from the southeast, all at once veered, without warning, to the northwest, and accompanied by rain, sleet, and snow, blew with hurricane force. A large number of vessels were anchored behind Delaware Breakwater, and greater portion of them not being prepared for this unexpected and violent change, were either swamped at their moorings or driven ashore. The whole fleet was suddenly thrown into the wildest commotion; chains were sundered, masts shattered, and collision, wreck, and indescribable chaos followed. The waters were stirred into turbulence and uproar, which with the raging storm-wind driving and roaring through the pitchy blackness of the night, were enough to appall the stoutest heart. The terrified crews on board the vessels had barely time to escape from their berths and scramble on the deck or into the rigging for safety. It seems little less than miraculous that more lives were not lost. When morning dawned the havoc was discernible in all directions, as far as the eye could reach through the still driving snow. Nearly every craft that had been at anchor the night before was either sunk stuck fast to some shoal, or stranded on the beach. By reference to the record, under dates of March 12, 13, 14, and 15, under the caption "Services of Crews," it will be seen that fourteen schooners and two steamers were assisted in one way or another by the lifesaving men; yet these were not all that had suffered damage, many others having been cared for by wreckers.

As soon as day began to break on the morning of the 12th the keeper of the Lewes Station mustered his crew and made an attempt to reach the beach, knowing full well that the services of his men would be needed. The force of the gale was so great,

however, that the sand and sleet whirling in their faces so cut and buffeted them that they were prostrated one by one upon the ground, and were obliged to crawl on their hands and knees back to the station. Half an hour later the weather lulled somewhat, the snow temporarily ceasing so that surrounding objects could be seen, and the surfman again set forth, their attention being directed to the schooner ALLIE H. BELDEN, fast aground a few hundred yards off shore, the sea making a clean breach over her, and her crew clinging to the rigging. As this craft seemed to be in the most imminent danger, steps were at once taken for the rescue of her imperiled people. The beach-apparatus was placed in position and, notwithstanding the fury of the gale, the line at the first fire was landed over the vessel within reach of the captain, but the wind was so furious that he was unable to hold it and it was blown adrift. It was then hauled ashore, a dry one substituted, and this was thrown across the jib-boom, but the sailors being aloft in the rigging and the sea breaking heavily over the hull, they could not get to it and it was finally washed off. Another line was then got ready, but at this stage a thick snow squall set in and the seas again flying over the beach, the line became wet and froze stiff. On being fired it parted, and two further attempts to communicate with the schooner likewise failed. It now became evident that the vessel's crew could only be saved by means of a boat, though the prospect of launching and forcing one through the tremendous surf was anything but encouraging, and could not possibly have been accomplished by the station men unaided when they first arrived on the scene. But by the time many people had assembled on the beach willing and eager to lend their services. On the lines being taken to the station and laid near the stove to thaw, the crew assisted by a strong force of men, procured the self-bailing surfboat and carried it to a point opposite the stranded pilot schooner E. W. TUNNEL, which lay near the beach. Those on board threw a line ashore which was made fast in the bow of the surfboat and the lifesavers, several pilots, and a wrecker who had volunteered, were hauled out through the breakers alongside. The boat was then cast loose, but as soon as it drew away from the schooner and the wind took effect, it sagged off to the leeward, and despite the united efforts of the oarsmen to maintain headway, was beaten back upon the beach. After this five of the stoutest and most daring of the young pilots made a vigorous attempt in one of their own boats to reach the distressed craft, but they were similarly driven ashore. Nothing daunted, however, a fresh crew of pilots took the places of their exhausted comrades, and by almost superhuman exertions succeeded in reaching another stranded schooner-the E. L. DOW-but far to leeward of the objective point. Here they bailed out their boat, which had shipped a great deal of water, and after resting, again pushed on, but within some fifty yards of the BELDEN their boat struck the bar, where the seas instantly boarded it and they were thrown, as in the two former instances, back to the starting point. The station crew, assisted by two volunteers, then took their boat, waded with it well to windward, and by a desperate struggle managed to get safely away from the beach, but the men were so exhausted by their previous efforts that the boat had to be brought to an anchor to allow them time to somewhat regain their strength. By alternately rowing and anchoring, and thus holding on to every inch that was made, the lifesavers by the most desperate work at last got alongside the wreck. This was at half past 2 in the afternoon, nine hours from the time the efforts of rescue began. They took from the rigging in a nearly exhausted condition the captain, mate and two seamen, who clung to the shrouds for twelve hours. It was learned that two of the schooner's crew-Moses H. Small, of Dennis, Massachusetts, and the cook, whose name was not known-had some time before succumbed to the exposure and cold and fallen overboard. The rescued, all of whom were more or less frostbitten, the captain and one seaman badly so, were speedily conveyed to the station, where Dr. Hall, of Lewes, who had generously placed his services at the disposal of the keeper, did everything in his power to alleviate their condition. The captain and mate were sheltered and comfortably cared for the surfman four days, while the others remained only two, having recovered sufficiently by that time to start for their homes.

The heroic efforts put forth by the lifesavers on this occasion to rescue the imperiled sailors are worthy of the highest commendation. It is plain that they were in no way responsible for the loss of the two lives, as unquestionably everything was done within the limits of man's knowledge and skill to reach the vessel in time to save them. Three of the surfmen were badly frostbitten, yet they did not once shrink from the task before them, but resolutely and bravely continued at their post until those who remained on the ill-fated schooner were brought off. The fact that the undertaking was at times confronted by apparently insurmountable obstacles did not in the least dishearten them. Neither can too much praise be bestowed upon the pilots and others, who, by their intrepid work, helped to make the rescue possible.

The schooner, which became a total wreck, was from Boothbay, Maine, bound to Easton, Maryland, with a cargo of ice.

WIZARD OF BRISTOL SAVED!

By: PA3 David M. Santos, U.S. Coast Guard

(U.S Coast Guard Photo by AE1 Rich Bacon)

Coast Guardsmen from the cutter POINT HARRIS, a patrol boat from Honolulu, saved the sinking 70-year-old ketch WIZARD OF BRISTOL off Koko Head, HI. November 6, 1989. The Coast Guard received a distress call from the 63-foot boat that morning saying that they were taking on water and in danger of sinking.

Lieutenant junior grade William Strong, Commanding Officer of the POINT HARRIS said, "The ships decks were awash. She would have sank within 15 minutes, in fact the crew was preparing to abandon ship when we arrived."

Shane McIntire, owner of the vessel said, "We were sailing along when we heard a loud bang and felt a sudden jolt. My brother went down below and noticed a lot of water coming in and we started pumping. But the pumps couldn't keep up with the water coming in. We still don't know exactly what happened."

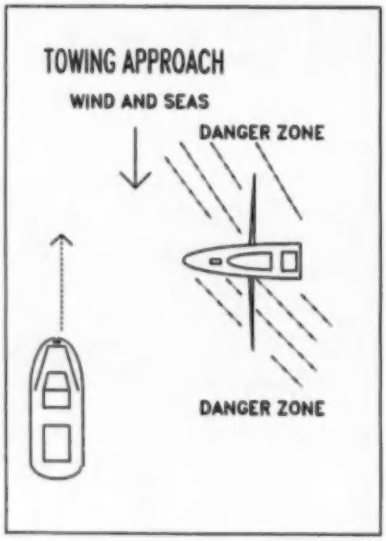
A Coast Guard Helicopter located the vessel and dropped a P-140 pump to help control the flooding that quickly filled the main cabin. A damage control party from the POINT HARRIS transferred two additional pumps and even tried to rig a sail around the bottom of the boat to clog the hole and help control the flooding.

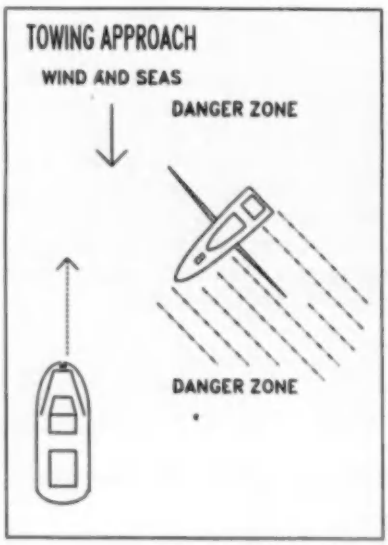
By the end of the day the boat had been successfully dewatered enough so that it was towed to Keehi Marine Center where it will undergo repairs.

HEAVY WEATHER TOWING

By: BMCM J.J. Mason, National Motor Life Boat School

The MLB Standardization Team has been visiting various units for the past 24 months and has been underway with about 275 boat crews. One of the drills I evaluate is towing as described in COMDTINST M16114.16 (ready for ops evaluation program). The scenario is a 50FT F/V disabled and adrift with a jammed rudder. This drill usually goes well with most coxswains in calm weather. What is good enough for calm weather may not get the job done safely in adverse weather. This article describes some standard procedures that are proven in fair and foul weather.



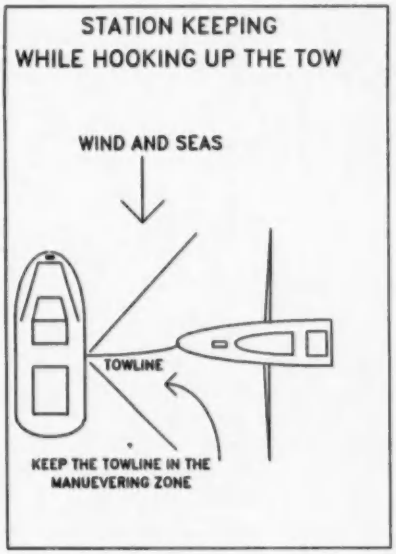


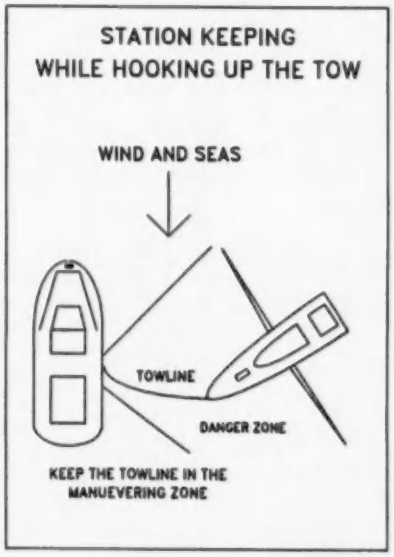
Most coxswains are pretty good about communicating their intentions to the disabled vessel, so I'll concentrate here with things that concern the MLB crew itself. Prior to breaking out all the required gear you should circle the disabled vessel, if appropriate, looking for lines and nets in the water, condition of the vessel, and the location of bitts and cleats. Once satisfied, you should move the MLB to a safe position down swell, down wind of the disabled vessel and station keep with the MLB's bow into the predominate force (wind or swell). Now is the time to brief your crew and break out the necessary gear. (Keep that bow into the predominate force). Make the drouge ready to pass if needed, make up your towing rig (bridle, or pendant).

You should be forewarned that making up the bridle from side lines will generally require close supervision to get the legs the same length. This evolution gets a bit tricky at night or in heavy weather, so check and double check this rig before sending it over to the disabled vessel. (Did you remember to mouse that shackle?) From my observation the typical boat crewman could use a little more training making up bridles. The last item to look for before making your approach is gear adrift and make double sure that no towline is faked off the reel. Faking the towline in the welldeck or main deck is a safety hazard on the MLB and should be avoided at all times.

Now that all preparations are complete start the approach into the wind and sea. Maneuver into position, stop and begin station keeping before the heaving line goes over. Remember to stay a safe distance from the disabled vessel and keep him in the maneuvering zone. (This is most likely where an

inexperienced coxswain will get a line in the wheel). I can't stress enough the importance of being able to station keep with the MLB. All coxswains should practice this evolution whenever the opportunity presents itself. When I work with coxswains that have trouble towing it usually is because they have not mastered station keeping with the MLB well enough to safely pass the towing rig.





Once comfortable with the position relative to the disabled vessel, pass the heaving line. (By the way, I kept track for the past 2.5 years and in wind less than 20 knots the heaving line makes it over on the third attempt and in wind over 20 knots the fourth attempt is the successful one). A little extra training in this area would make things go considerably smoother. Again the key here is being able to station keep for the required time to get the towing rig hooked up to the disabled vessel. Now start paying out line, coxswains supervise your crew here as too many like to let the line slide through their hands and most work too close to the bitt. Have them lean against the mast and pay out the line hand over hand. Towline should be payed out with one engine clutch ahead or at the most two engines .clutch ahead. Coxswains, listen to the person working the bitt, slow down if the line is paying out too fast. In heavy weather we should try to keep the seas approximately 45 degrees off either bow. If the MLB falls directly into the through you stand a good chance of fouling the line in the wheels. If you pay out the line bow into the seas you could shockload the line or be set back on it. Once sufficient line is out and you have talked to the master of the towed vessel, come around to your course home.

If you practice these skills in foul weather and especially at night, you and your crew will be better prepared for any heavy weather SAR call that comes your way.

RESCUE AND SURVIVAL SYSTEMS NOTES

By: CWO Steve Seybold, G-NRS-2

NSN For The Model CG-P1A Dewatering Pump Kit

The 1/89 issue of ON SCENE provided a new NSN for the Model CG-P1A dewatering pump kit. Because of difficulties at the supply center, the old stock number (NSN 4320-01-150-8901) will continue to be used when ordering the kit.

Emergency Flotation Bags

Several events have recently brought attention to the plight of the Emergency Flotation Bag.

First, Commandant Notice 10470 of 6 October 1989 provided information regarding inadequately charged freon canisters and mandated modification of the EFB.

Although the canisters are slightly undercharged, they will not affect operation of the EFB. Buoyancy of an EFB charged with one of these canisters is reduced from 500 pounds to 465 pounds...an insignificant amount.

Modification of the EFB involves removing a valve core from the bag's inflation stem. Although this inflation stem was originally specified (yes, we do make mistakes at Headquarters), it was designed for use with carbon dioxide which operates at higher pressures than freon. Removal of the core allows free flow of the freon into the bag.

Specific modification instructions are contained in the Commandant Notice. Upon completion of the modification, surface units should annotate the survival equipment log contained in the Rescue and Survival Systems Manual (COMDTINST M10470.10B). Aviation units should annotate appropriate documents when issued under Mandatory Special Requirements.

The second problem with the EFB, more recently identified, deals with the inflation assembly used on EFBs manufactured by Texas Boom Company, Inc. These bags were manufactured under contract number DTCG-88-C-00040 and may be identified by their yellow color.

When activated, the faulty inflation assemblies cause the EFBs to partially inflate or not to inflate at all. This is due to failure of the inflation assembly to adequately puncture the seal on the freon canister. These inflation assemblies must be replaced.

E/GICP Advisory 4/90 was recently issued and provides instruction for obtaining replacement valves, at no cost, from Supply Center Brooklyn. The Supply Center point of contact is ETC Johnson at (FTS) 663-5294 or (COMM) (718) 965-5294. Technical questions may be directed to me, CWO Seybold, at (FTS) 267-1585 or (COMM) (202) 267-1585.

During my course of dealing with the EFB, I often ask field units if they are using the bags. Informally, I have found they are not. In addition, problems with the environmental concerns of using freon as an inflation agent must be addressed. We are actively seeking an alternate method for inflation. However, prior to implementing any alternatives, the worth of the EFB must be established. The entire question of whether or not EFBs are needed in the field will soon be addressed in a letter to the districts and areas requesting information on how often and for what type of cases these devices are being used, and whether the deletion of the EFB from the stock system will affect operations.

Dear On Scene Editor,

Commandant (G-NRS-2)
Editor, ON SCENE
U.S. Coast Guard Headquarters
2100 Second Street, S.W.
Washington, D.C. 20593

Fold on line. Seal with tape.

The deadline for submitting articles to appear in the next issue of ON SCENE is 8 FEBRUARY 90. Please try to keep them under three pages if at all possible. If you submit an article for publication and have it typed on the standard terminal, it will save us typing time. Copy the submission on a 5-1/4" or 8" floppy disk and mail it with a printed copy. ***Pictures are most welcome.*** *Please tell us if you wish the disk to be returned. Arrangements can also be made to accept articles over a modem.*

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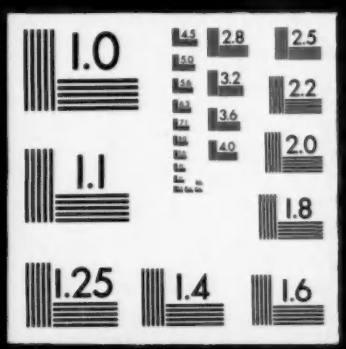
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